



I, Screechy

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TOOLS:

- [Dremel tool with cutting, grinding, or routing bits \(1\)](#)
- [Soldering/desoldering tools \(1\)](#)



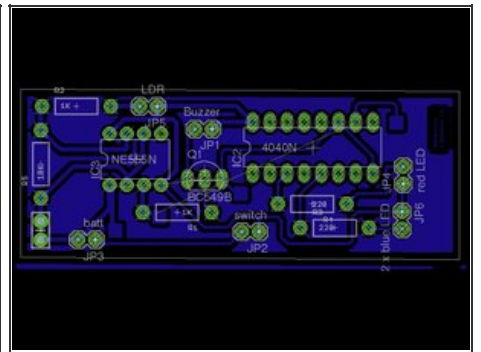
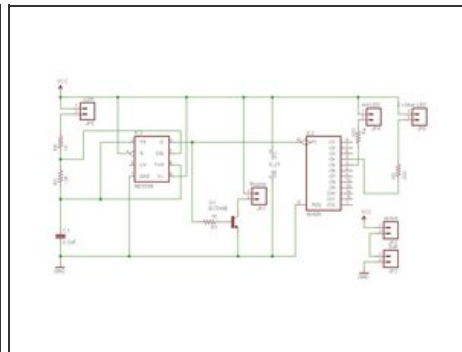
PARTS:

- [555 Timer IC \(RadioShack #276-1723\) \(1\)](#)
- [4040 - 12 bit counter IC \(1\)](#)
- [On/off switch \(1\)](#)
- [LDR Light Sensor \(1\)](#)
- [5mm Blue LED Radio Shack Part #210-2850 \(2\)](#)
- [LED, Red \(1\)](#)
- [Beeper/Buzzer \(1\)](#)
- [BC 549 - transistor \(1\)](#)
- [Resistor, 10k \$\Omega\$, 1/8W \(1\)](#)
- [Resistors, 1k \$\Omega\$ \(2\)](#)
- [2.2 uF capacitor \(1\)](#)
- [9V battery \(1\)](#)

SUMMARY

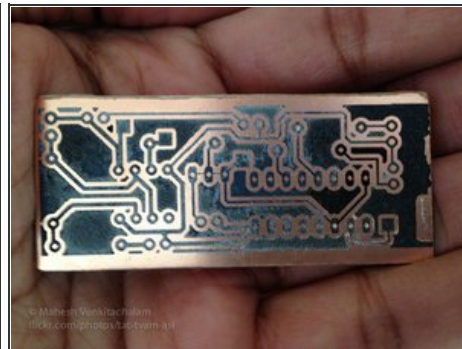
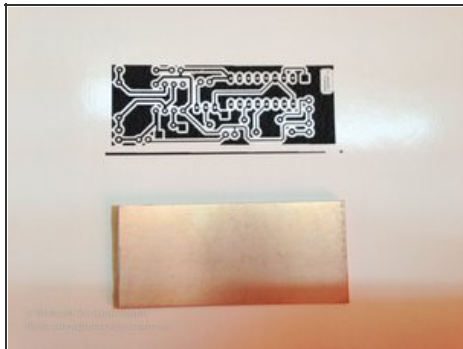
This project is an attempt at designing a simple toy based on the principle of a light sensitive oscillator. It produces sound and light that vary in frequency with the intensity of light falling on it.

Step 1 — I, Screechy



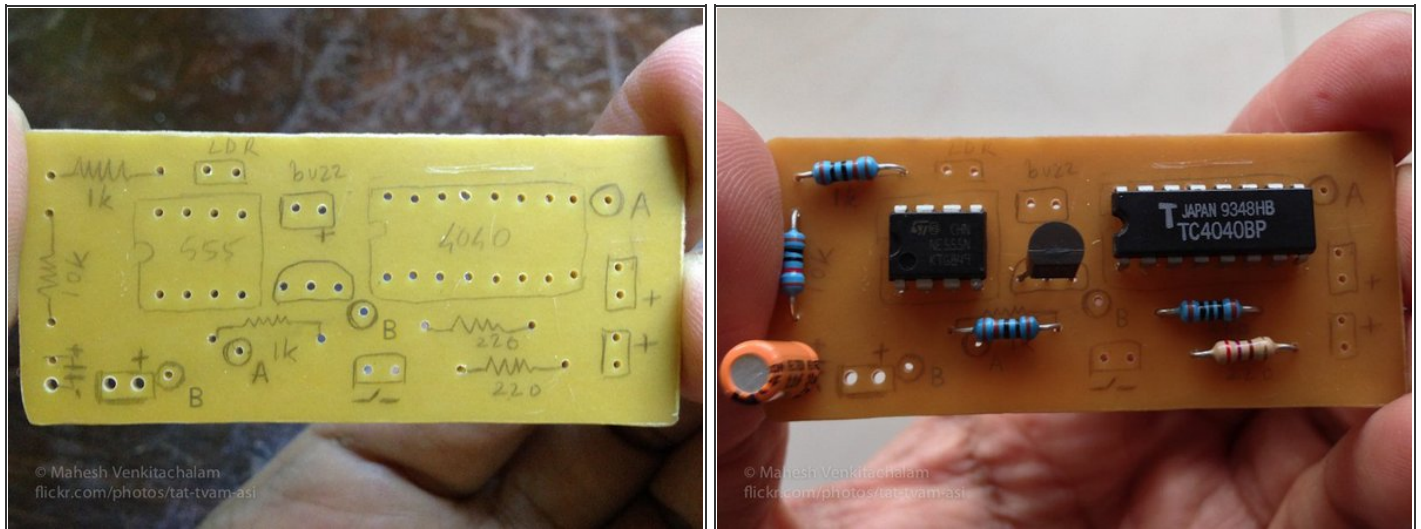
- Download schematic and PCB files in EAGLE format from [here](#).
- The circuit works using a combination of an oscillator and a frequency divider. You can read an explanation [here](#).

Step 2



- You can use a general-purpose PCB for this project. But it's much cleaner to use a custom PCB.
- You can easily make a PCB at home using the toner transfer technique described in [this link](#).
- Using the above link as guide, print out the PCB design on photo paper on a laser printer, iron it on to the copper laminate, and once the toner sticks, etch it out with ferric chloride. You can then drill holes in the PCB using a 0.8 mm bit on a Dremel tool.

Step 3



- A pencil drawing on the non-copper side of the PCB will help you place the components easily. There are 2 connections that need to be routed over the board manually using wires. Connect a wire between the two points labeled "A", and another wire between the two points labeled "B".
- Solder the components on to the PCB.

Step 4



- Use a dremel or any other tool of choice to cut holes for the LEDs, LDR, and switch.
- Solder wires to LEDs, LDR and switch, and fix them on to the enclosure before soldering the other end of the wires to the PCB. I did it in the opposite order first and had to cut the wires to fix it!
- Drill some holes in the cap to let the sound out.
- Insert the PCB and 9V battery into the bottle. Place a small sheet of plastic in between to protect the PCB's solder joints from shorting on the battery.
- Enjoy your screechy robot!

Read more details about the project here:

<http://electronut.in/projects/i-screechy...>

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